

A Study on the Impact of Different Aging Models on the Health Status of Chinese Older Adults-Evidence from CHARLS national baseline

Lu Chen

Xinjiang Medical University

Rui Ma

Xinjiang Medical University

Fang Ma

Xinjiang Medical University

TingTing Jia

Xinjiang Medical University

Guofang Ma (✉ 420194943@qq.com)

Xinjiang Medical University

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Abstract

Objective: To explore the effects of different aging models on the self-rated health status of Chinese elderly people, with the aim of suggesting ways to save resources, improve the quality of life of elderly people, and formulate policies related to healthy aging.

Methods: This paper used the 2018 China Health and Retirement Longitudinal Study (CHARLS) database to obtain a total of 4443 samples by excluding irrelevant missing variables, and further The Ordered probit regression model and SEM model were constructed to test the effects of different aging patterns on the self-rated health status of the elderly in China.

Results The score of self-rated health status of the elderly in China is (3.084 ± 1.020) , which is in the middle to upper level; the linear regression results indicate that the frequency of interaction with children and monthly financial support from children among the family elderly variables have significant effects on the self-rated health status of the elderly. The p-values of old-age insurance and personal income were less than 0.01, which were statistically significant; among the control variables, gender, age, education level and place of residence all had significant effects on the health level of the elderly.

Conclusion: There is a significant effect of elderly care model on the self-rated health status of the elderly; family care as the main feature of family care plays an important role in improving the health level of the elderly; there is a gap in community care; the marginal benefit of elderly health management is the largest.

1 Introduction

According to the latest data from the seventh census, the number of elderly people over 60 years old in China has accounted for 18.70% of the country's total population. According to China's 2020 Report on Nutrition and Chronic Diseases, the number of patients with chronic diseases is rising, as is the proportion of deaths due by chronic diseases, which accounted for 88.5% of all deaths in 2019. With the aging of the elderly and the continuous miniaturization of family size, the traditional single elderly care model can no longer meet the diverse elderly care needs, and aging and the accompanying healthy aging has become an important issue for all sectors of society. It is critical to accelerate the construction of a diverse elderly care service system in order to better understand the path to healthy aging and improve the health status of the elderly in China. Clarifying the impact of different elderly care models on the health status of the elderly in China is an important prerequisite to achieving this goal.

Scholars in China have gradually focused on the study of the elderly's health, and as the research continues, scholars have explored the factors influencing the health level of the elderly in China from various perspectives, concluding that different aging patterns are one of the important factors influencing the elderly's health level in China[2]. However, a review of the relevant literature reveals that most research focuses on the various contributing factors on the health status of the old, with only a few studies delving into the health condition of the elderly in the retirement paradigm. Based on this, this paper examines

how various elderly care models affect the health of the elderly from the perspective of the elderly care model, with the goal of providing recommendations for reducing elderly care resources, improving the quality of life of the elderly, formulating policies related to healthy aging, and providing a realistic basis for promoting the long-term development of elderly health in China.

2 Data And Methods

2.1 Data sources

The data in this paper are micro data from the China Health and Retirement Longitudinal Study (CHARLS) 2018 National Baseline Survey, which is organized and implemented by Peking University's National Development Institute and covers 17,000 households in approximately 10,000 households in 30 provincial administrative units across China. Sample: A multi-stage sampling strategy was used, with the PPS sampling method used in both the county/district and village sampling stages. The CHARLS questionnaire was based on the Health and Retirement Survey (HRS) in the United States and the Elderly Tracking Survey (ELSA) in the United Kingdom, and its data were divided into two major categories, The former primarily includes basic personal information, basic household information, household interaction and economy, general health status and function, health care and insurance, work and retirement and pension, household income expenditure and assets, and so on; the latter primarily includes basic community information, infrastructure and activity places, population and labor force, enterprises, and so on.

Using the most recent cross-sectional data from CHARLS 2018, this study includes a total of 4,438 samples after excluding samples that lacked information on important explanatory variables.

2.2 Descriptive statistics and variable definition

2.2.1 Frequency statistics of variables

The self-rated health status of the subjects included in this study was scattered, with the majority falling into the "fair" and "poor" categories, accounting for 46.75 % and 24.56 %, respectively, and there were more male respondents than female respondents, as shown by the frequency table of variables. With a nearly balanced ratio of males to women, the former accounted for 51.88% of total responses, while the latter accounted for 48.12%. The majority of the respondents were between the ages of 60 and 70, with only 448 people beyond the age of 80 accounting for nearly 10% of the total number of respondents. Furthermore, about 70% of the respondents' greatest education level was below elementary school, and education levels were generally poor. The ratio of married to divorced respondents is nearly 3:1, while the number of respondents residing in rural areas is nearly three times that of urban areas, accounting for 75.75 % of all respondents.

Table 1
Variables frequency statistics [n=4443]

Characteristic	N	Frequency (%)	Cumulative frequency (%)
HealthStatus			
Very Good	432	9.72	9.72
Good	513	11.55	21.27
Fair	2,077	46.75	68.02
Poor	1,091	24.56	92.57
Very Poor	330	7.43	100
Gender			
Male	2305	51.88	51.88
Female	2138	48.12	100
Age			
60-65years old	1255	28.25	28.25
66-70years old	1298	29.21	57.46
71-75years old	853	19.2	76.66
76-80years old	589	13.26	89.92
Above 80years old	448	10.08	100
Education			
Primary and below	3243	72.99	72.99
Middle and High school	1016	22.87	95.86
College and above	184	4.14	100
Marital status			
Married	3173	71.42	71.42
Divorced	1265	28.47	99.89
Never married	5	0.11	100
Location of residence			
City	794	17.89	17.89
Combination zone	282	6.35	24.25

2.2.2 Explained variables

In this paper, "Self-rated health status (Y) of the elderly" was chosen as the explanatory variable, i.e., "How do you think your health is?", which is an ordinal variable with five levels of answers, namely: 1=very good, 2=good, 3=fair, 4=bad, 5=very bad. From Table 1, it can be seen that the mean value of self-rated health status of our elderly people is 3.084, which means that overall our elderly people have average self-rated health status. (See Table 1 for details)

2.2.3 Explanatory variables

In order to explore the influence of different aging models on the health self-assessment status of the elderly, this study refers to previous studies and classifies China's aging models into "family aging model", "community aging model" and "self-aging model" using factors such as family care, community services, economic income and pension insurance. "The study uses different variables to describe different models of elderly care.

Three major variables comprise the family aging pattern (X_1). One of them is "number of people in household (X_{11})," which has a mean value of 0.554, indicating that the elderly in the sample have an average of 0.554 people per household, indicating that the elderly have a small population size. When the elderly in the sample do not live with their children, the mean value of "frequency of contact with children (X_{12})" is 4.897, indicating that their children visit them once a week on average. The mean value of the variable "financial support from children (X_{13})" was 1.239, indicating that when the elderly did not live with their children, financial support from children was low, usually less than three thousand dollars.

The community care model includes seven variables, namely, "whether to receive day care and other elderly care services (X_{21})," "whether to receive regular medical check-up services (X_{22})," "whether to receive home visiting services (X_{23})," "whether to enjoy family bed service (X_{24})," "whether to enjoy community nursing service (X_{25})," "whether to enjoy health management service (X_{26})" and "whether they enjoy recreational activities (X_{27})", the mean values of these seven variables are all around 0.9, indicating that more than 90% of the elderly in the sample have not enjoyed community-based elderly care services.

Self-aging pattern mainly includes two variables: "whether there is personal wage income (X_{31})" and "whether there is pension insurance (X_{32})", and the mean values of the two variables are 0.880 and 0.783, indicating that about 88% of the elderly in the sample do not have regular The mean values of the two variables are 0.880 and 0.783, indicating that 88% of the elderly people in the sample do not have regular income, and the participation rate of old-age insurance is low, only about 22.7%.

2.2.4 Control variables

With reference to relevant research and practical aspects, five control variables were set in this paper to minimize the omitted variables: gender (C_1), age (C_2), education level (C_3), married status (C_4), and type of dwelling (C_5). Table 1 demonstrates that the number of male and female respondents is similar, that the respondents' ages are usually between 66 and 75 years old, that their education levels are generally low, and that most of the respondents' highest education level is elementary school. The definition and description of each variable are shown in Table 2.

Table 2

Definition and description of each variable

Variables	Explanation Of variables	Description	Mean	S.D	Max	Min
Health Status (Y)	How do you feel about your current health status?	1=Very good, 2=Good,3=Fair, 4=Poor, 5=Very poor	3.084	1.020	1	5
Family-care (X₁)	House Member Number (X ₁₁)	Numeric, fixed distance variables	0.554	1.148	0	11
	Child's Visit Frequency (X ₁₂)	1=Almost every day, 2=2-3 times a week, 3=Once a week, 4=Every two weeks, 5=Once a month, 6=Once every three months,7=Once every six months, 8=Once a year, 9=Almost never, 10=Other	4.897	2.685	1	9
	Child's Financial Support (X ₁₃)	1=below of 3000Yuan, 2=3000-5999Yuan, 3=6000 Yuan and above	1.239	0.576	1	3
Community-care (X₂)	Aged Care Service Centers (X ₂₁)	Yes=0,No=1	0.988	0.108	0	1
	Regular Medical Examination (X ₂₂)	Yes=0,No=1	0.815	0.389	0	1
	Home Visit(X ₂₃)	Yes=0,No=1	0.958	0.200	0	1
	Family Bed(X ₂₄)	Yes=0,No=1	0.993	0.083	0	1
	Community Care(X ₂₅)	Yes=0,No=1	0.989	0.105	0	1
	Health Management (X ₂₆)	Yes=0,No=1	0.978	0.147	0	1
	Entertainment(X ₂₇)	Yes=0,No=1	0.969	0.173	0	1
Self-care (X₃)	Pension (X ₃₁)	Yes=0,No=1	0.880	0.325	0	1
	Income(X ₃₂)	Yes=0,No=1	0.783	0.412	0	1
Control Variables (C)	Gender(C ₁)	Male=0,Female=1	0.481	0.500	0	1

Age(C ₂)	1=60-65, 2=66-70, 3=71-75, 4=76-80, 5=80years old above	2.477	1.298	1	5
Education (C ₃)	1=Primary and below 2= Middle and High school 3= College and above	3.161	1.899	1	10
Marital status(C ₄)	1=Married 2= Divorced 3= Never married	2.177	1.776	1	6
Location of residence (C ₅)	1=City 2=Combination zone 3=Rural	2.583	0.778	1	4

2.3 Research Methodology

A linear regression equation was constructed using the elderly self-rated health status as the explanatory variable and each influencing factor as the explanatory variable, and then the magnitude and direction of each influencing factor was judged by the coefficients of the explanatory variables. Since the explanatory variable (Y) is a typical discrete ordered variable, the Ordered Probit regression model was used to verify whether the explanatory variables related to the three elderly care models had significant effects on the self-rated health status of the elderly. The model function expression is.

$$y = \beta_0 + \sum_{i=1}^3 \beta_i X_{1i} + \sum_{i=1}^7 \beta_{i+3} X_{2i} + \sum_{i=1}^2 \beta_{i+10} X_{3i} + \sum_{i=1}^5 \beta_{i+12} C_i + \varepsilon_i \quad (\text{Model 1})$$

where y is the observed value of the explanatory variable, β_0 is the constant term, β is the parameter to be estimated, X_i is the ith explanatory variable, C_i is the ith control variable, and ε denotes a random disturbance term obeying a normal distribution.

3 Results

3.1 Ordered Probit regression results analysis

Using the aforementioned model, ordered Probit regression analysis of the explanatory and associated variables of this study revealed the following regression results. Table 3 shows that there are two family aging variables that have significant effects on the elderly's self-rated health status: the frequency of children's interaction (X_{12}) and children's financial support (X_{13}) have significant effects on the self-rated health status of the elderly at the 99% and 95% levels, respectively, indicating that the more frequent children's interaction rate and the higher level of financial support are better for the health status of the elderly, thus it can be seen that family care plays an important role in This is consistent with the findings of Chen Dong[5] (2015) and other scholars; However, the number of family members in the family variable (X_{11}) had no effect on their health self-assessment. There are only two significant variables in the community aged care variables, namely "whether to enjoy health management services (X_{26})" and

"whether to enjoy recreational activities (X_{27}) which indicate that certain community aged care services have a positive impact on the elderly's health, and also indicate that there are gaps in the content of community elderly care services in China, as well as poor implementation of day care and other elderly care services.

Among the self-pension variables, X_{31} and X_{32} have a significant effect on the level of elderly brief at 99%, which indicates that the implementation of pension insurance brings great benefits to the elderly in their old age.^[6] In addition, it also indicates that when the elderly meet the basic physiological needs (i.e., income level reaches a certain level), they will raise their needs to a higher level, which is in line with Maslow's hierarchy of needs theory. The four control variables of gender (C_1), age (C_2), education level (C_3), and type of residence (C_5) all have significant effects on the self-rated health status of older adults, indicating that older men have better self-rated health status than older women, that the health status of older adults declines with age, that higher education level indicates higher cognitive ability and thus better health status of older adults, and also indicating that The health status of the elderly living in urban areas is better than that of the elderly living in rural areas due to the difference in living standards caused by geographical differences^[7]. In addition, marital status (C_4) does not have a significant effect on the health status of the elderly in China.

Table 3
Full-sample Ordered Probit regression results

Variables	Health self-assessment status (Y)			
	Coef	S.E.	95% CI	
Family-care (X ₁)	X ₁₁	0.01	0.014	-0.016-0.037
	X ₁₂	0.021***	0.006	0.009-0.033
	X ₁₃	-0.066**	0.028	-0.121-(0.011)
Community-care (X ₂)	X ₂₁	-0.064	0.213	-0.481-0.353
	X ₂₂	-0.024	0.044	-0.11-0.063
	X ₂₃	-0.122	0.095	-0.308-0.064
	X ₂₄	-0.622	0.395	-1.395-0.152
	X ₂₅	0.258	0.214	-0.161-0.676
	X ₂₆	0.42***	0.134	0.157-0.683
	X ₂₇	0.223**	0.106	0.015-0.431
Self-care (X ₃)	X ₃₁	0.376***	0.048	0.282-0.471
	X ₃₂	0.272***	0.037	0.2-0.344
Control Variables (C)	C ₁	0.15***	0.035	0.081-0.22
	C ₂	0.037***	0.013	0.012-0.062
	C ₃	-0.04***	0.01	-0.059-(-0.021)
	C ₄	-0.012	0.01	-0.032-0.007
	C ₅	0.075***	0.021	0.033-0.117

*** p<.01, ** p<.05, * p<.1

3.2 Analysis of the marginal effects of the aging model

Marginal effects, also known as marginal contribution benefits, are the outputs of a model in which the model produces a given increase of utility from each added variable[8] while its variables are fixed and other variables are added sequentially. This research does a marginal effect analysis on the regression

model to investigate the probability of different aging models on the choice of each level of old health status, and the results are provided in Table 4.

Table 4 shows that the variables of frequency of contact with children (X_{12}), financial support for children (X_{13}), access to health management services (X_{26}), recreational activity participation (X_{27}), pension insurance (X_{31}), personal income (X_{32}), gender (C_1), age (C_2), education level (C_3), and type of residence (C_5) all significantly increase the probability of self-rated health status of older adults in China. X_{26} and X_{31} had the greatest marginal impacts. The marginal effects of X_{26} on the options "very good" and "good" were 7.2% and 5%, respectively, whereas the marginal effects of X_{31} were 6.4 % and 4.4 %, respectively. Furthermore, the factors X_{26} and X_{31} significantly lowered the likelihood of picking "poor" and "very bad" options for older individuals' self-rated health condition, with marginal effects of 9.1 %, 5.9 %, 8.1%, and 5.2%, respectively, for the above two options.

Table 4

Marginal Effects of Different Aging Models on Self-Rated Health Status of Older Adults

Variables		Self-Rated Health Status				
		Very Good	Good	Fair	Poor	Very Poor
Family-care (X_1)	X_{11}	-0.002	-0.001	-0.001	0.002	0.001
	X_{12}	-0.004***	-0.002***	-0.001***	0.005***	0.003***
	X_{13}	0.011**	0.008**	0.004**	-0.014**	-0.009**
Community-care (X_2)	X_{21}	0.011	0.008	0.004	-0.014	-0.009
	X_{22}	0.004	0.003	0.002	-0.005	-0.003
	X_{23}	0.021	0.014	0.008	-0.027	-0.017
	X_{24}	0.107	0.073	0.042	-0.135	-0.087
	X_{25}	-0.044	-0.03	-0.017	0.056	0.036
	X_{26}	-0.072***	-0.05***	-0.028***	0.091***	0.059***
	X_{27}	-0.038**	-0.026**	-0.015**	0.048**	0.031**
Self-care (X_3)	X_{31}	-0.064***	-0.044***	-0.025***	0.081***	0.052***
	X_{32}	-0.046***	-0.032***	-0.018***	0.059***	0.038***
Control Variables (C)	C_1	-0.026***	-0.018***	-0.01***	0.032***	0.021***
	C_2	-0.006***	-0.004***	-0.002***	0.008***	0.005***
	C_3	0.007***	0.005***	0.003***	-0.009***	-0.006***
	C_4	0.002	0.001	0.001	-0.003	-0.002
	C_5	-0.013***	-0.009***	-0.005***	0.016***	0.01***

*** $p < .01$, ** $p < .05$, * $p < .1$

3.3 Robustness tests

The structural equation model primarily displays the relationship between latent and latent variables[9], which includes two categories of variables, latent and explicit variables, respectively. In the structural model diagram of the equation, the latent variables are represented by ellipses because they are invisible and cannot be directly detected. The explicit variables are those that are immediately observable and are

depicted in the model diagram as rectangles. The model connects the variables with arrows to construct a complete model diagram and accurately estimates the parameters of each path, progressively revealing the latent variables that aren't visible.

Since the significance of variables may vary with different model settings, the model is only robust if similar results can be obtained under different model settings. Therefore, in order to test the robustness of the regression and marginal effect estimation results, this study designs Structural Equation Modeling (SEM) on the effects of different aging patterns on the self-rated health status of the elderly in China based on the characteristics of the dependent variable. Based on the basic principles of structural equation modeling, four latent variables are designed, namely, healthStatus, family, society, and personal, where "HealthStatus" is measured by the dominant variable Y and "HealthStatus" is measured by the dominant variable Y. is measured by the dominant variable Y, "Family" is measured by the dominant variable X_{11} X_{12} X_{13} X_{14} , "Society" is measured by the dominant variable X_{21} X_{22} X_{23} X_{24} X_{25} X_{26} X_{27} X_{28} X_{29} X_{210} X_{211} X_{212} X_{213} X_{214} X_{215} X_{216} X_{217} X_{218} X_{219} X_{220} X_{221} X_{222} X_{223} X_{224} X_{225} X_{226} X_{227} X_{228} X_{229} X_{230} X_{231} X_{232} X_{233} X_{234} X_{235} X_{236} X_{237} X_{238} X_{239} X_{240} X_{241} X_{242} X_{243} X_{244} X_{245} X_{246} X_{247} X_{248} X_{249} X_{250} X_{251} X_{252} X_{253} X_{254} X_{255} X_{256} X_{257} X_{258} X_{259} X_{260} X_{261} X_{262} X_{263} X_{264} X_{265} X_{266} X_{267} X_{268} X_{269} X_{270} X_{271} X_{272} 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China's traditional lifestyle, in which women are the primary carers for their families and their health suffers as a result of long hours of work. According to the regression results, the frequency of children's contact and children's economic support had a significant positive relationship with the elderly's self-rated health status, indicating that the more frequent children's contact and the higher the level of economic support, the higher the elderly's self-rated health level, indicating that the elderly's dependency on their children in China is still high, which is one of the reasons why the dependency ratio of the elderly in China has continued to rise over the years. Due to China's already vast population base and the influence of the "filial piety culture," which considers it the obligation of every Chinese family to care for their family members, the number of household members has no substantial effect on the elderly's self-rated health status.

4.2 Self Aging

The presence or absence of personal income and the presence or absence of pension insurance have a significant impact on the self-rated health status of the elderly in China, indicating that the higher the income, the better the elderly's health, which could be due to the elderly's increased awareness of health risks[11]. People will seek higher level needs once their basic "physiological requirements," such as food and money, are met, according to Maslow's Hierarchy of Needs. The elderly with a higher socioeconomic status are more inclined to seek a superior senior care facility in order to age well. [12] The findings of this study show that the self-assessed health status of the elderly with pension insurance is significantly better than that of the elderly without pension insurance, implying that pension insurance implementation is an important prerequisite for ensuring healthy aging and promoting the development of China's pension service system. Meanwhile, education level has a significant impact on the elderly's self-rated health status, showing that the higher the education level, the better the elderly's self-rated health status. This is because the longer the years of education, the stronger the elderly's health awareness, and the greater the advantage in accessing high-quality medical resources, resulting in a higher health level.

4.3 Community Aging

The availability of health management services and involvement in recreational activities have a considerable impact on the elderly's self-rated health state, according to the correlation study. The regression results revealed that the elderly who participated in health management and recreational activities had much better health than those who did not, highlighting the necessity for community-based aged care services. The regression results, on the other hand, suggest that there is a significant gap in community-based senior care, and that community-based elderly care services have yet to completely play their role. Because of geographical limits and uneven distribution of medical services, the self-rated health condition of older persons in urban regions is better than that of those in rural areas^[13].

5 Conclusions And Limitations

This study utilized the 2018 CHARLS database and explored the effects of different aging patterns on the self-rated health status of older adults in China by developing Ordered Probit regression models, and the results showed that:

Firstly, senior care models have a significant impact on the elderly's self-rated health status; all three models of senior care, which are primarily defined by financial support from children, frequency of children's contact, availability of pension insurance, availability of personal income, and age, education level, and place of residence, have a significant impact on the elderly's self-rated health status.[14]Older individuals with more frequent kid contact and financial support were more likely to select the "very good" health status choice. Due to their advanced notions of aging and greater cognitive levels, older persons with better personal wealth and education levels had higher self-rated health levels. Furthermore, the incidence of numerous chronic diseases and death rates increases as elderly people age, and there is a large negative association between age and health status, i.e., the older one gets, the worse one's health self-assessment status becomes.

Second, as the primary feature of family aging, home care plays a critical role in enhancing the health of the elderly. The regression results show that the frequency of contact with children and the financial support of children can effectively improve the health level of the elderly, and when paired with other studies, it can be inferred that the elderly prefer the family elderly model when they are in good health and have no particular medical needs.

Thirdly, There is a gap in community elderly care; in this study, the community elderly care model was formed using the characteristics of whether to enjoy regular medical checkups, community nursing care, home visits, home hospital beds, and community care and comfort services such as health management and day care, which contains seven measurable variables, and after regression analysis, it was found that only health management services and recreational activities had significant effects on the self-rated health status of the elderly. This indicates that the development of community elderly care model in China is still in its early stages of growth,, and the content of community elderly care services is single, and the relevant facilities and equipment have not fully played their role.

Fourthly, The marginal benefits of health management for older adults are greatest. As the population ages and the disease and mortality spectrum evolves to a largely chronic disease, health management becomes more important.

Limitations: For the empirical investigation, this study used data from the 2018 China Health and Retirement Longitudinal Study (CHARLS) national baseline survey, and while this database has a sufficient sample size, there are two issues: First, unlike traditional questionnaire design, the CHARLS database cannot choose variables that completely meet the research design and research content needs, but can only be selected by consulting relevant literature and personal understanding, and there is some subjectivity. Second, based on the features of the explanatory variables, this research chooses the Ordered Probit regression model as the major way of empirical analysis, which eliminates most endogeneity issues while still having a low chance of bias.

6 Suggestions

The Health China 2030 plan draft advocated that the aged be given special attention, and the old's health was elevated to a new political high. The following points are made in order to hasten the construction of a comprehensive health-care system for the aged.

First and foremost, governments at all levels should continue to increase special financial subsidies for the combination of medical and health care at the grassroots level, establish a perfect funding subsidy mechanism, and include elderly care service expenditures in the government budget to ensure a stable source of funding[15] based on the establishment of clear policies, regulations, and regulatory systems. Furthermore, it is necessary to increase the government's enthusiasm for purchasing combined medical and nursing care services, to continuously improve the quality and efficiency of nursing care services by expanding the scope of combined medical and nursing care service supply, and to continuously improve the level and efficiency of nursing care services by expanding the scope of combined medical and nursing care service supply, increasing the vitality of the main body of nursing care service supply, forming a diversified funding channel, and providing special subsidies for the supply of nursing care services for the elderly, to call for attracting more social groups, private institutions, and other capital to join the nursing care business, to call for attracting more social groups, private institutions, and other capital to join the nursing care business, to call for attracting more social groups, private institutions, and other capital We advocate for more social groups, private institutions, and other capital to enter the senior care market, as well as enhancing the vitality of senior care service providers, developing diversified financing channels, and delivering affordable and convenient senior care services. Second, we should urge relevant departments and institutions to promote early disease detection and health education, accelerate the establishment of family doctor contracts and family hospital beds, completely and actively participate in community care, and establish and strengthen an elderly care service system that is supported by institutions, supported by the community, and based at home. Finally, we should actively explore and establish a long-term care service model for the disabled and demented elderly, from home and community to professional elderly care institutions, provide services such as home visits, and continue to strengthen community elderly care service facilities to ensure the integrity and sustainability of elderly people receiving elderly care services to the greatest extent possible.

Declarations

Ethics approval and consent to participate

The data used in this study were retrieved from the CHARLS. This survey was endorsed by the Biomedical Ethics Committee of Peking University (NO.IRB00001052–11015). All participants in the survey signed or marked (if illiterate) the informed consent was obtained from all subjects and/or their legal guardians. I confirm that all methods were carried out in accordance with relevant guidelines and regulations and all experimental protocols were approved by a named institutional and licensing committees.

Consent for publication:

Not applicable.

Availability of data and materials:

The datasets generated and analysed during the current study are available in the CHARLS repository, [<http://charls.pku.edu.cn/en>].

Competing interests:

The authors declare that they have no competing interests.

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Authors' contributions:

CL MR and JTT designed this study and performed the statistical analysis. CL drafted the manuscript. MR, MF, CL, MGF participated in data analysis and helped to revise the draft. All authors read and approved the final manuscript.

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Author affiliations

¹Department of Social Medicine and Health Care Management , School of Public Health, Xinjiang Medical University. ²School of Medicine and Health Management, Xinjiang Medical University.

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Figures

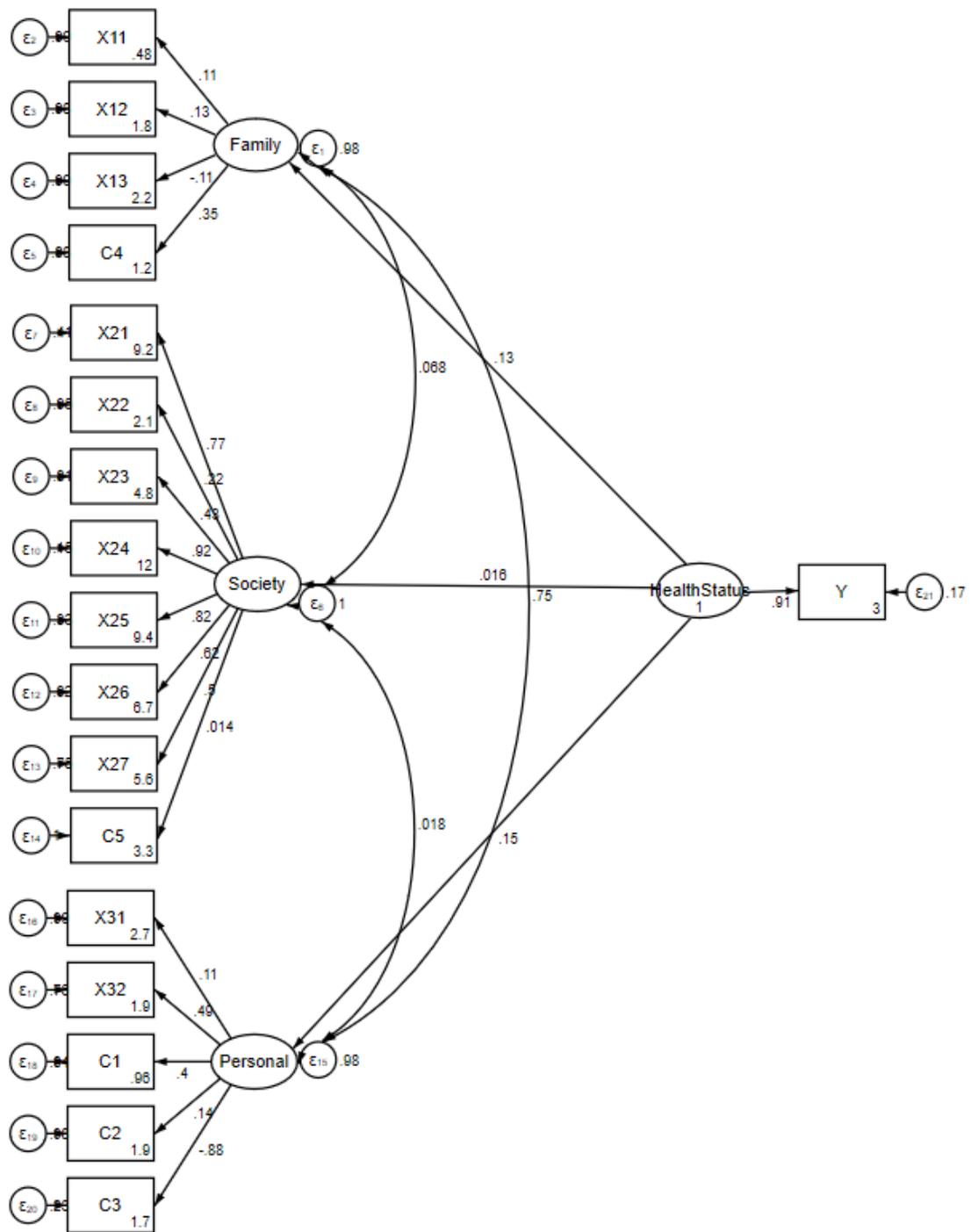


Figure 1

Path diagram of SEM model of self-rated health status of Chinese elderly